

## Chapter X.—POWER USED IN MANUFACTURING.

**Summary for the United States: 1869 to 1914.**—The increasing importance of power in the manufacturing industries of the country is shown by Table 215, which gives for all industries combined the number and horsepower of the engines or motors employed by manufacturing concerns, as reported at each census from 1869 to 1914, inclusive.

Primary power, as the term is used by the Bureau of the Census, comprises all power which is primary from the standpoint of the manufacturing establishments using it. It includes, therefore, not only the power of engines and water wheels owned and operated by the manufacturing establishments, but also rented power—that is, the power of electric motors run by purchased current and any other power that may be purchased or rented from outside concerns. It should not be assumed that electric motors so operated are themselves rented, as they are in most cases owned by the establishments using the power. Primary power does not include the power of electric motors which are run by current generated in the same establishment, since the inclusion of such power would result in duplication.

The horsepower of electric motors run by current generated in the establishment where it is used is presented separately. This figure indicates the extent to which electric motors are being used for the distribution of the power generated by steam engines or other primary motors within the establishment, but it has no direct bearing on the extent of the use of power in manufacturing industries. The total horsepower of all electric motors, including that of motors run by purchased current (classified as rented electric power), is also given.

The power reported for custom sawmills and gristmills and for cotton ginneries is included in the figures for the censuses prior to 1899. The amount of power used in these establishments is comparatively small, however, and its inclusion has only a slight effect on the statistics for all industries combined, although it has an appreciable effect in the case of some states and of the industries directly concerned.

**Table 215**

### POWER IN MANUFACTURING INDUSTRIES.

POWER.	1914	1909	1904	1899	1889	1879	1869
Number of establishments..	275,791	268,491	216,180	207,514	355,405	253,852	252,148
Number of establishments reporting power.....	205,590	185,042	134,481	133,418	100,726	85,923	( <sup>1</sup> )
Primary horsepower, total..	22,547,574	18,675,376	13,487,707	10,097,893	5,938,635	3,410,837	2,346,142
Average horsepower per establishment.....	109.7	100.9	100.3	75.7	59.0	39.7	.....
Owned.....	18,500,036	16,802,706	12,854,805	9,778,418	5,850,064	3,410,837	2,346,142
Steam engines and turbines:							
Number.....	137,176	153,525	127,267	130,710	91,403	56,483	( <sup>1</sup> )
Horsepower.....	15,681,688	14,228,632	10,917,502	8,189,564	4,586,089	2,185,458	1,215,711
Internal-combustion engines:							
Number.....	37,693	34,356	21,515	14,334	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Horsepower.....	991,905	751,186	289,423	134,742	8,930	( <sup>1</sup> )	( <sup>1</sup> )
Water wheels and motors:							
Number.....	18,069	21,282	20,992	23,099	39,005	55,404	( <sup>1</sup> )
Horsepower.....	1,826,443	1,822,888	1,647,880	1,454,112	1,255,045	1,225,379	1,130,431
Rented.....	4,047,538	1,872,670	632,902	319,475	88,571	( <sup>1</sup> )	( <sup>1</sup> )
Electric:							
Motors.....	452,102	199,309	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Horsepower.....	3,917,655	1,749,031	441,589	182,562	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Other horsepower.....	129,883	123,639	191,313	136,913	88,571	( <sup>1</sup> )	( <sup>1</sup> )
Electric.....	8,847,622	4,817,140	1,592,475	492,936	15,569	( <sup>1</sup> )	( <sup>1</sup> )
Rented:							
Motors.....	452,102	199,309	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Horsepower.....	3,917,655	1,749,031	441,589	182,562	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Generated by establishment reporting:							
Motors.....	320,260	189,545	73,119	16,891	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Horsepower.....	4,929,967	3,068,109	1,150,886	310,374	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Figures not available.

<sup>2</sup> Includes 29,293 horsepower reported as "other" owned power in 1909; 92,154 horsepower in 1904; 49,985 horsepower in 1899; and 4,784 horsepower in 1889.

The total primary horsepower of manufacturing establishments in 1914 was 22,547,574, as compared with 2,346,142 in 1869. The percentages of increase for the four decades from 1869 to 1909 were 45.4, 74.1, 70, and 84.9, respectively, and for the five-year period 1909-1914, 20.7. The total increase in primary power during the 45 years amounted to 20,201,432 horsepower. Of this amount, steam power contributed 71.6 per cent, water power 3.4 per cent, the power of internal-combustion engines 4.9 per cent, rented electric power 19.4 per cent, and other rented power six-tenths of 1 per cent. In 1914, 82 per cent of the primary horsepower was owned power and 18 per cent was rented power, most of the latter being electric. The table shows a rapid increase in the percentage of rented power, beginning with 1899, when rented electric power was first reported separately.

Only steam power and water power (both forms representing owned power) were reported at the censuses of 1869 and 1879, other forms being then very unimportant. Slightly more than one-half (51.8 per cent) of the total power used in manufactures in 1869 was steam power. This proportion increased at each succeeding census until 1899, when the proportion had reached 80.6 per cent; during the decade 1899-1909, however, the proportion declined, being only 76 per cent in 1909. The amount of steam power reported for 1914 was 15,681,688, or 69.5 per cent of the total primary power, nearly thirteen times the amount in 1869.

On the other hand, water power used directly in manufacturing has constituted a smaller proportion of the total primary power used in manufacturing at each succeeding census, representing only 8.1 per cent of the total primary power in 1914, as compared with 48.2 per cent in 1869. There was an actual increase in this form of power for the 45-year period, however, amounting to 696,012 horsepower, or 61.6 per cent. It should be noted, further, that a large part of the electric current purchased by manufacturing establishments is generated by water power. If the amount of the water power thus indirectly used by manufacturers could be ascertained and added to that directly used, the total would show a rapid increase, especially for the five-year period 1909-1914. The development of long-distance electric transmission, which makes it possible to use water power at a distance from the cities and other places selected as most desirable locations for manufacturing establishments, is doubtless largely responsible for the marked increase in the use of rented electric power.

Internal-combustion engines, as the term is here used, include not only such engines using natural or manufactured gas and blast furnace gases, but also those using gasoline, crude petroleum, kerosene, and alcohol. The first United States census of manufactures at which statistics in regard to the use of internal-combustion engines were obtained was that of 1889, when a total of 8,930 horsepower was reported for such engines. In 1914 the horsepower of this class of engines was 991,905, or more than one hundred times as great, and the rates of increase for many of the states have been even more remarkable. The proportion of the total horsepower represented by that of such engines rose from two-tenths of 1 per cent in 1889 to 1.3 per cent in 1899, 2.1 per cent in 1904, 4 per cent in 1909, and 4.4 per cent in 1914.

While the wide usage of the internal-combustion engine is due to its adaptability where but a small amount of power is required, or where the power is not used continuously, the average capacity of these engines has increased steadily from 9.4 horsepower in 1899 to 13.5 in 1904, 21.9 in 1909, and 26.3 in 1914. Although the internal-combustion engine is used to some extent in states where natural gas is not available, this form of power is most frequently employed in states which are large producers of natural gas. The extensive application of electric power has probably somewhat retarded the growth in the use of the internal-combustion engine, particularly in establishments where comparatively little power is required, but the further improvement of producer-gas systems, whereby the low grades of coal can be utilized for the development of power by means of these engines, will doubtless enhance their value. Again, part of the increased use of the internal-combustion engine is due to the fact that blast-furnace gas can be used in these engines. In 1904 the blast-furnace branch of the iron and steel industry reported a total of 3,757 horsepower for internal-combustion engines, while in 1909 the horsepower of the internal-combustion engines in the industry had increased to 125,230, and their average capacity had risen from 139 horsepower to 2,087 horsepower. Blast furnaces for 1914 reported 194,037 horsepower for these engines with an average capacity of 1,866.

The growth in the use of electricity in manufacturing industries has been remarkable. Statistics of the horsepower of electric motors used in manufacturing were first obtained at the census of 1889, when a total of 15,569 horsepower was reported. Rented electric power was first reported separately in 1899, in which year 182,562 horsepower was used. In 1914 the amount of this kind of power had increased to 3,917,655 horsepower, or more than twenty times as much as in 1899. Of the total rented power

reported in 1899, electric power constituted 57.1 per cent, but the proportion had reached 96.8 per cent in 1914. All other kinds of rented power increased 5.1 per cent during the five-year period 1909-1914.

Electric power is generally applied by means of relatively small motors distributed throughout the manufacturing establishment, some of which are in general use, while others are required only at infrequent intervals. As the electric power can be used or cut off at will, it proves both convenient and economical, especially for the operation of machinery which is in use only a part of the time; and the cleanliness and quietness of the electric motor as compared with other sources of power also give it manifest advantages in certain industries, such as the clothing industries. These inherent advantages, taken in connection with the low cost, in many localities, of electric current generated by water power, explain the rapid increase in the use of rented electric power.

The electric motor run by purchased current furnishes power for manufacturing with a minimum of trouble or attention on the part of the operator, and for this reason it is often used with profit, especially in small establishments, even when rather high rates have to be paid for the current. Where large amounts of power are used, however, the cost of the current becomes of greater moment, and it often proves economical for an establishment which desires to enjoy the advantages of electrically driven machinery to install its own dynamos and transform at least a part of the primary power into electric energy, to be thus distributed to the various machines as needed.

As previously explained, the census of 1914 was not confined to large manufacturing establishments, but embraced all having products valued at \$500 or more, provided they were not engaged in the hand trades or neighborhood industries. In some of the industries distinguished at the census of 1914 little power is required and a number of the establishments reported no power at all. A great many small manufacturing establishments in other industries likewise used no power. A few establishments failed to report whether or not they employed power; the number of these was so small, however, as to have no appreciable effect on the statistics.

Of the 275,791 establishments covered by the census of 1914, 205,590, or 74.5 per cent, reported the use of power, as compared with 185,042 establishments, or 68.9 per cent of the total number in 1909. The total number of establishments shown for 1899 include some which under the definition of "factories" adopted for later censuses would have been omitted, and therefore the figures for that year are not strictly comparable with later censuses. Undoubtedly, however, the use of power was more general in 1914 than in 1899, the total number of establishments in all industries increasing 32.9 per cent, while the number reporting power increased 54.1 per cent. The increase in the proportion of establishments using power is due chiefly to the more general use of rented electric power by small establishments, and also in some measure to the increased use of internal-combustion engines by such establishments.

**Horsepower in leading industries: 1914, 1909, 1904, and 1899.**—Table 216 shows for 105 industries the amount of each of the several kinds of primary power reported in 1914, 1909, 1904, and 1899. The total electric power is also shown, including that of motors operated by current generated in the establishments, in addition to that of motors operated by purchased current. The first 88 of these industries were selected because they were the most important from the standpoint of employment, each reporting 10,000 or more wage earners in 1914. There were a number of industries, however, that reported a greater amount of power than some of those included in these 88 leading industries, and the statistics of power for 17 of these industries—those which in 1914 reported more than 20,000 horsepower—are also shown in the table.

The total primary power used in 1914 exceeded 800,000 horsepower in 7 industries, namely, the lumber industry, the steel works and rolling mills, the manufacture of paper and wood pulp, and of cotton goods, the blast-furnace industry, the foundries and machine shops, and the flour mills and gristmills. The primary power for these 7 industries combined amounted to 11,884,987 horsepower, or 52.7 per cent of the total for all industries.

The industries listed in Table 216 differ very widely in respect to the relative importance of the several kinds of power. This is due partly to differences in the geographic location of the industries, which affect the character of the power most easily available, and partly to differences in the character of the machinery used, which affect the adaptability of the different kinds of power.

Detailed statistics of power for 1914 for each industry are given in Table 220.

**Comparative statistics of horsepower, by divisions and states: 1869-1914.**—As to most of the items derived from the manufactures census, comparisons for states and geographic divisions can not properly be made between all the censuses from 1869 to 1914 for

the reason that the earlier censuses included the hand trades and neighborhood industries, which were excluded at the later censuses. With respect to horsepower, however, approximately exact comparisons can be made for each census back to 1869, for the reason that the amount of horsepower used in the hand trades and neighborhood industries was so small that it had little effect upon the totals for the earlier censuses. Table 217 shows, for each state and geographic division, the total horsepower used in manufacturing industries as reported at each census from 1869 to 1914, and the amount of each of the principal kinds of power. The statement which follows shows the percentage which each kind of power formed of the total primary power in each division at each census.

KIND OF POWER.	Census year.	PER CENT OF TOTAL PRIMARY POWER—UNITED STATES AND GEOGRAPHIC DIVISIONS: 1869-1914.									
		United States.	New Eng-land.	Mid- die At- lantic.	East North- Central.	West North- Central.	South At- lantic.	East South- Central.	West South- Central.	Moun- tain.	Pa- cific.
Owned: Steam engines and turbines. <sup>1</sup>	1914	69.5	60.0	70.6	70.6	65.7	70.3	84.3	86.5	71.2	56.4
	1909	76.2	61.1	75.3	79.8	76.2	78.4	92.2	92.5	76.6	70.2
	1904	80.9	63.2	79.2	87.1	83.4	84.7	95.1	97.1	86.1	78.5
	1899	81.1	61.3	81.3	88.6	85.1	82.9	93.6	97.7	80.6	81.1
	1889	77.2	54.8	80.8	86.8	84.3	68.3	88.1	96.2	84.7	84.7
	1879	64.1	43.1	66.6	80.5	67.8	50.5	72.0	92.0	48.8	70.0
	1869	51.8	29.7	50.3	71.8	70.6	33.4	62.7	92.3	56.7	61.4
Water wheels and motors.	1914	8.1	24.2	6.8	4.0	7.6	7.8	2.0	0.5	5.1	6.7
	1909	9.8	27.9	8.5	4.8	7.8	10.0	2.8	0.4	5.4	7.9
	1904	12.2	31.0	12.1	6.2	8.4	11.2	3.2	0.6	7.6	7.1
	1899	14.4	34.5	13.1	7.1	8.6	14.7	4.9	0.7	14.8	11.2
	1889	21.1	43.0	17.1	11.7	14.6	31.1	11.5	3.3	14.3	13.0
	1879	35.9	56.9	33.4	19.5	32.2	49.5	28.0	8.0	51.2	30.0
	1869	48.2	70.3	49.7	28.2	29.4	66.6	37.3	7.7	43.3	38.6
Internal - combus- tion engines. <sup>2</sup>	1914	4.4	1.6	5.6	6.1	5.4	3.1	1.4	5.5	1.5	1.8
	1909	4.0	1.5	5.0	6.5	5.2	2.0	1.2	3.4	1.0	1.5
	1904	2.1	0.8	2.9	2.9	3.3	1.4	0.5	0.8	0.9	1.6
	1899	1.3	0.6	1.5	1.9	3.0	0.8	0.4	0.5	1.0	1.3
	1889	0.2	( <sup>3</sup> )	0.2	0.2	0.2	0.2	0.1	0.3	0.2	0.2
Rented: Electric <sup>4</sup> .....	1914	17.4	13.4	16.2	18.8	21.0	18.4	12.2	7.5	22.1	34.9
	1909	9.4	8.1	10.3	8.6	10.4	9.3	3.7	3.6	16.7	20.2
	1904	3.3	2.8	3.3	3.0	4.4	2.4	1.1	1.5	5.0	12.1
	1899	1.8	1.8	2.4	1.3	2.4	0.6	0.7	1.0	3.3	5.3
	1889	0.6	0.8	0.9	0.5	0.3	0.4	0.1	0.1	0.2	0.2
Other <sup>3</sup> .....	1914	0.6	0.8	0.9	0.5	0.3	0.4	0.1	0.1	0.2	0.2
	1909	0.7	1.4	1.0	0.4	0.3	0.2	0.1	0.1	0.3	0.2
	1904	1.4	2.2	2.5	0.8	0.5	0.3	0.1	0.1	0.3	0.7
	1899	1.4	1.8	1.8	1.2	0.9	1.0	0.3	0.1	0.3	1.1
	1889	1.5	2.2	1.9	1.3	0.9	0.4	0.3	0.2	0.8	2.1

<sup>1</sup> Figures include for 1909, 1904, 1899, and 1889 the amount reported under the head of "other" owned power.

<sup>2</sup> Not reported for 1879 and 1869.

<sup>3</sup> Less than one-tenth of 1 per cent.

<sup>4</sup> Rented electric power not reported separately for 1889; no electric power of any kind reported for 1879 or 1869.

Summary by states and geographic divisions: 1914.—The detailed statistics of power for all manufacturing industries combined in each state and geographic division as reported for 1914 are given in Table 222.

## HORSEPOWER USED IN 105 LEADING INDUSTRIES: 1914, 1909, 1904, AND 1899.

Table 216

Table 216	INDUSTRY.	Census year.	PRIMARY HORSEPOWER.						Electric horsepower owned and rented.
			Total.	Owned.			Rented.		
				Steam engines and turbines. <sup>1</sup>	Water wheels and motors.	In-ternal-com-bustion engines.	Electric.	Other.	
All industries.....	1914	22,547,574	15,681,688	1,826,443	991,905	3,917,655	129,883	8,847,622	
	1909	18,675,376	14,228,632	1,822,888	751,186	1,749,031	123,639	4,817,140	
	1904	13,487,707	10,917,502	1,647,880	289,423	441,589	191,313	1,592,475	
	1899	10,097,893	8,189,564	1,454,112	134,742	182,562	136,913	492,936	
Industries with over 10,000 wage earners in 1914.									
Agricultural implements.....	1914	121,428	79,688	5,691	5,113	30,764	172	83,117	
	1909	100,601	71,894	8,390	4,433	15,684	200	38,905	
	1904	89,738	77,175	6,300	2,360	3,828	75	20,713	
	1899	70,646	61,467	6,758	1,055	1,100	266	7,643	
Artificial stone products <sup>2</sup> .....	1914	20,326	6,137	72	8,012	6,053	52	6,472	
	1909	12,185	4,362	80	5,221	2,427	95	2,897	
	1904	2,776	1,862	20	345	529	20	534	
Automobiles, including bodies and parts. <sup>3</sup>	1914	173,684	60,233	411	10,075	102,156	809	135,818	
	1909	75,550	39,325	287	7,000	27,641	1,297	41,829	
	1904	10,109	7,376	80	1,459	1,051	143	4,229	
Boots and shoes, including cut stock and findings.	1914	112,929	64,236	2,066	3,729	37,389	5,509	61,657	
	1909	96,302	60,772	2,815	3,532	17,381	11,802	32,381	
	1904	63,968	44,412	2,270	2,676	5,959	8,651	12,663	
	1899	55,489	38,719	2,663	1,346	3,823	8,938	5,525	
Boots and shoes, rubber.....	1914	24,621	19,885	1,275	20	3,381	60	6,607	
	1909	25,903	22,293	1,883	-----	1,712	15	3,407	
	1904	26,084	24,145	1,300	-----	39	600	1,191	
	1899	25,017	23,492	1,525	-----	-----	-----	188	
Boxes, fancy and paper.....	1914	38,179	18,734	1,979	1,709	14,918	839	22,722	
	1909	23,323	10,730	2,425	1,621	6,927	1,620	9,415	
	1904	15,117	8,343	1,718	1,518	2,138	1,400	3,057	
	1899	9,286	6,093	364	608	854	1,367	1,311	
Brass, bronze, and copper products.	1914	122,700	78,639	3,291	8,371	31,673	726	64,868	
	1909	106,120	78,101	3,374	4,890	18,399	1,356	33,462	
	1904	69,494	59,063	2,959	1,834	3,143	2,495	8,846	
	1899	47,257	40,348	2,271	717	739	3,182	1,635	
Bread and other bakery products.	1914	107,771	30,095	369	7,400	68,933	974	86,779	
	1909	65,298	25,509	334	8,166	31,160	129	39,795	
	1904	37,241	22,650	452	5,675	8,863	101	11,993	
	1899	22,472	17,904	329	2,036	2,025	178	2,477	
Brick, tile, pottery, and other clay products.	1914	470,758	379,626	490	21,669	68,638	335	95,080	
	1909	451,186	415,486	367	14,968	20,263	102	31,773	
	1904	360,280	345,879	813	8,410	4,413	765	7,720	
	1899	252,502	250,008	981	1,513	-----	-----	2,397	
Butter, cheese, and condensed milk.	1914	130,862	104,729	1,274	7,229	17,027	603	23,061	
	1909	101,349	90,933	1,465	3,373	5,366	212	8,276	
	1904	93,845	88,923	1,411	1,800	1,597	114	2,878	
	1899	88,062	85,010	1,594	825	316	317	627	
Buttons.....	1914	14,398	8,838	394	826	3,951	389	5,016	
	1909	12,831	7,602	850	783	2,833	763	3,416	
	1904	6,982	4,352	517	721	568	794	679	
	1899	4,165	2,330	144	263	117	1,311	187	
Canning and preserving.....	1914	120,004	90,778	877	8,967	18,726	656	28,438	
	1909	81,179	70,392	398	4,519	5,469	401	8,728	
	1904	60,831	56,122	460	1,962	1,776	511	3,150	
	1899	38,624	36,102	219	598	623	1,082	1,542	
Carpets and rugs, other than rag.	1914	43,963	29,486	4,130	19	9,159	1,169	25,251	
	1909	38,553	30,680	3,305	500	2,709	1,359	10,906	
	1904	33,945	29,643	2,988	55	293	966	5,587	
	1899	26,740	23,091	3,145	35	-----	469	192	

<sup>1</sup> Figures include "other" owned power as follows: 1909, 29,293 horsepower; 1904, 92,154 horsepower; 1899, 49,985 horsepower.

<sup>2</sup> "Marble and stone work" for 1899 includes "artificial stone products."

<sup>3</sup> "Carriages and wagons and materials" for 1899 includes "automobiles, including bodies and parts."

## HORSEPOWER USED IN 105 LEADING INDUSTRIES: 1914, 1909, 1904, AND 1899—Continued.

Table 216—Continued.

INDUSTRY.	Census year.	PRIMARY HORSEPOWER.						Electric horsepower owned and rented.
		Total.	Owned.			Rented.		
			Steam engines and turbines.	Water wheels and motors.	Internal-combustion engines.	Electric.	Other.	
<i>Industries with over 10,000 wage earners in 1914—Contd.</i>								
Carriages and wagons and materials. <sup>1</sup>	1914	112,549	66,093	3,132	10,557	32,654	113	46,384
	1909	126,032	82,928	4,667	13,120	24,969	348	39,424
	1904	106,159	82,488	3,917	9,739	8,780	1,235	16,434
	1899	83,771	71,262	3,842	4,218	3,014	1,435	5,805
Cars and general shop construction and repairs by electric-railroad companies.	1914	44,989	5,997	1,010	1,121	36,861	.....	44,670
	1909	35,794	4,831	.....	9	30,954	.....	33,024
	1904	3,154	1,355	600	40	1,159	.....	10,358
	1899	6,443	4,920	75	50	1,188	210	7,399
Cars and general shop construction and repairs by steam-railroad companies.	1914	433,994	323,634	1,792	5,916	102,562	90	325,054
	1909	293,361	255,840	450	3,140	33,786	145	161,288
	1904	167,973	159,746	203	1,877	6,074	73	52,635
	1899	95,087	92,438	56	703	220	1,670	4,563
Cars, steam-railroad, not including operations of railroad companies.	1914	126,687	99,934	230	5,757	20,416	350	115,479
	1909	97,797	89,823	370	1,148	6,456	.....	61,060
	1904	55,994	55,260	225	193	316	.....	14,505
	1899	33,395	32,858	392	85	.....	60	1,292
Cement <sup>2</sup> .....	1914	490,402	291,321	6,346	28,366	164,369	.....	336,516
	1909	371,799	295,138	3,430	19,065	54,166	.....	158,749
	1904	149,604	137,770	2,980	3,063	5,751	40	35,292
Chemicals <sup>3</sup> .....	1914	282,385	124,329	3,135	5,962	134,481	14,478	172,510
	1909	208,657	103,488	11,066	1,190	92,067	846	156,709
	1904	132,394	71,299	6,469	477	10,130	44,019	18,240
	1899	90,429	69,602	1,915	387	18,233	292	20,276
Clocks and watches, including cases and materials.	1914	15,647	11,863	198	483	3,063	40	8,844
	1909	14,957	12,593	284	425	1,612	43	7,023
	1904	10,731	9,180	449	72	892	138	3,513
	1899	7,251	6,315	443	110	131	252	545
Clothing, men's, including shirts.	1914	53,281	19,409	1,248	3,428	28,284	912	33,444
	1909	42,725	16,009	1,380	5,259	18,816	1,261	22,894
	1904	29,829	14,641	910	3,210	9,581	1,487	11,337
	1899	20,457	10,636	695	1,874	5,076	2,176	6,279
Clothing, women's.....	1914	28,396	2,632	88	1,125	24,029	522	24,757
	1909	22,294	4,112	206	1,958	15,175	843	16,085
	1904	14,916	4,422	309	1,593	7,494	1,098	8,027
	1899	9,962	2,909	519	1,989	3,093	1,452	3,376
Coke, not including gas-house coke.	1914	120,327	80,567	.....	2,120	37,640	.....	58,409
	1909	62,602	46,251	500	1,212	13,754	885	41,064
	1904	66,669	65,144	188	150	1,187	.....	10,509
	1899	34,767	34,760	.....	7	.....	.....	1,462
Confectionery.....	1914	55,823	34,345	22	1,760	19,282	414	36,941
	1909	35,870	25,102	8	1,408	8,607	745	16,983
	1904	24,292	19,603	21	615	3,360	693	6,832
	1899	19,410	14,340	162	1,910	2,554	444	3,793
Cooperage and wooden goods, not elsewhere specified.	1914	59,001	48,404	2,651	1,740	5,765	441	9,076
	1909	65,108	55,071	3,818	2,029	2,819	1,371	4,524
	1904	56,988	50,382	4,060	1,221	969	356	2,086
	1899	38,462	34,485	2,770	686	215	306	683
Copper, tin, and sheet-iron products. <sup>4</sup>	1914	75,263	35,400	224	7,431	30,644	1,564	49,473
	1909	62,366	34,655	420	8,572	17,898	821	30,771
	1904	30,229	20,824	272	2,894	5,006	1,233	7,454
	1899	28,829	14,597	118	1,756	11,550	808	12,160

<sup>1</sup> "Carriages and wagons and materials" for 1899 includes "automobiles, including bodies and parts."<sup>2</sup> "Lime" for 1899 includes "cement" and "wall plaster."<sup>3</sup> "Chemicals" for 1899 include "sulphuric, nitric, and mixed acids" and "wood distillation, not including turpentine and rosin."<sup>4</sup> Includes for 1914 and 1909 some establishments manufacturing enameled stamped ware which were included under "enameling and japanning" in 1904 and 1899.

HORSEPOWER USED IN 105 LEADING INDUSTRIES: 1914, 1909, 1904, AND 1899—Continued.

Table 216—Continued.

INDUSTRY.	Census year.	PRIMARY HORSEPOWER.						Electric horsepower owned and rented.
		Total.	Owned.			Rented.		
			Steam engines and turbines.	Water wheels and motors.	Internal-combustion engines.	Electric.	Other.	
<i>Industries with over 10,000 wage earners in 1914—Contd.</i>								
Cordage and twine and jute and linen goods.	1914	93,937	65,867	14,377	2,844	10,649	200	34,098
	1909	77,091	57,581	15,768	1,270	2,353	119	14,293
	1904	65,984	52,369	12,589	98	737	191	8,271
	1899	47,733	38,287	8,245	905	10	286	1,606
Corsets.....	1914	7,057	4,683	-----	6	2,273	95	4,273
	1909	4,581	3,320	-----	56	1,061	144	2,804
	1904	3,284	2,695	10	60	262	257	434
	1899	3,638	2,975	30	54	191	388	455
Cotton goods, including cotton small wares.	1914	1,585,953	1,011,303	314,219	4,016	252,864	3,551	512,903
	1909	1,296,517	877,201	303,024	2,812	108,512	4,968	235,902
	1904	986,604	708,333	252,923	1,786	14,095	9,467	67,139
	1899	795,834	531,621	251,850	321	2,081	9,961	17,594
Cutlery and tools, not elsewhere specified.	1914	73,255	36,295	9,838	8,194	17,586	1,342	34,680
	1909	68,294	38,815	13,382	6,731	8,325	1,041	17,785
	1904	54,397	34,106	11,459	4,052	3,653	1,127	8,427
	1899	38,283	22,732	11,988	1,647	581	1,335	1,223
Dyeing and finishing textiles, exclusive of that done in textile mills.	1914	130,172	111,506	9,969	690	7,162	845	51,021
	1909	107,746	92,284	10,114	1,207	2,665	1,476	24,011
	1904	84,868	70,555	10,130	711	1,087	2,385	11,724
	1899	69,238	58,840	9,474	8	50	866	1,999
Electrical machinery, apparatus, and supplies.	1914	227,731	142,085	1,065	8,694	74,476	1,411	262,119
	1909	158,768	99,897	1,114	6,753	50,045	959	164,540
	1904	105,376	77,059	1,181	2,940	21,313	2,883	61,753
	1899	43,674	34,078	835	1,695	4,074	2,992	24,256
Fancy articles, not elsewhere specified.	1914	8,005	3,500	407	586	3,075	437	3,240
	1909	8,310	5,131	452	479	1,783	465	4,115
	1904	5,886	3,537	296	627	792	634	1,021
	1899	4,386	2,834	426	133	278	715	343
Fertilizers.....	1914	114,281	60,353	337	5,786	47,450	355	65,266
	1909	64,711	49,777	365	1,825	12,579	165	19,238
	1904	47,989	44,857	353	246	2,358	175	5,275
	1899	38,680	37,211	359	410	220	480	1,061
Firearms and ammunition.....	1914	18,828	10,176	462	3,139	4,951	100	17,259
	1909	17,840	11,505	989	2,927	2,278	141	8,472
	1904	21,408	18,613	1,139	880	632	144	3,777
	1899	7,470	6,146	755	89	171	309	639
Flour-mill and gristmill products.	1914	822,384	403,186	229,328	76,451	112,441	978	150,248
	1909	853,584	473,571	264,131	62,681	49,901	3,300	67,066
	1904	775,318	474,077	258,352	26,326	15,584	979	20,308
	1899	670,719	407,475	242,821	16,217	4,206	(2)	5,571
Food preparations, not elsewhere specified. <sup>3</sup>	1914	80,022	39,012	915	5,352	34,347	396	47,761
	1909	55,166	35,554	1,150	4,331	13,460	671	20,924
	1904	28,162	22,185	1,158	1,283	3,123	413	4,239
	1899	15,485	12,991	683	708	584	519	799
Foundry and machine-shop products. <sup>4</sup>	1914	1,129,768	548,027	19,585	108,673	444,328	9,155	896,849
	1909	869,305	548,960	18,702	96,966	192,977	11,700	623,914
	1904	606,165	467,660	18,633	49,006	55,359	15,507	199,625
	1899	443,085	366,271	22,209	21,519	16,029	17,057	54,907

<sup>1</sup> Includes "other" owned and rented power.<sup>2</sup> Included in internal-combustion engines.<sup>3</sup> Includes for 1914 and 1909 some establishments compounding table sirups which were included under "sugar and molasses" in 1904 and 1899.<sup>4</sup> "Foundry and machine-shop products" for 1899 include "stoves and furnaces, including gas and oil stoves," and "locomotives, not made by railroad companies."

## HORSEPOWER USED IN 105 LEADING INDUSTRIES: 1914, 1909, 1904, AND 1899—Continued.

Table 216—Continued.	Census year.	PRIMARY HORSEPOWER.						Electric horse-powered and rented.
		Total.	Owned.			Rented.		
			Steam engines and turbines.	Water wheels and motors.	Internal-combustion engines.	Electric.	Other.	
<i>Industries with over 10,000 wage earners in 1914—Contd.</i>								
Furnishing goods, men's <sup>1</sup> .....	1914	17,300	8,946	811	569	6,374	600	10,348
	1909	12,116	7,501	480	740	2,988	407	4,860
	1904	5,421	3,514	28	597	977	305	1,586
	1899	3,552	2,375	206	68	539	364	543
Furniture and refrigerators....	1914	251,997	185,676	5,160	7,317	48,597	5,247	88,964
	1909	221,451	185,037	6,848	5,830	20,420	3,316	43,252
	1904	169,774	149,530	6,890	4,133	4,586	4,635	9,565
	1899	119,608	105,606	6,637	1,426	1,606	4,333	3,392
Gas and electric fixtures and lamps and reflectors.	1914	18,668	7,088	197	1,722	9,206	455	11,491
	1909	15,862	6,930	244	1,544	5,896	1,248	8,788
	1904	8,444	5,126	77	1,012	1,364	865	2,213
	1899	6,991	4,917	165	179	588	1,142	1,081
Gas, illuminating and heating.	1914	245,715	212,223	425	13,729	19,271	67	38,826
	1909	128,350	115,514	2,814	7,128	2,723	171	17,336
	1904	73,101	67,652	359	3,211	1,454	425	3,978
	1899	31,797	31,442	33	250	52	20	271
Glass.....	1914	163,139	105,061	201	43,448	14,224	205	92,896
	1909	123,132	98,971	5	20,731	3,425	-----	43,589
	1904	91,476	76,915	31	13,947	583	-----	16,769
	1899	52,943	50,496	27	2,364	44	12	6,030
Gloves and mittens, leather...	1914	3,357	1,757	192	82	1,277	49	1,515
	1909	2,889	1,625	250	141	850	23	1,000
	1904	2,725	1,676	250	283	436	80	472
	1899	2,165	1,313	211	275	235	131	258
Hats, fur-felt.....	1914	20,851	17,936	135	48	2,655	77	8,141
	1909	19,245	16,678	20	147	2,172	228	6,186
	1904	16,630	15,871	68	43	369	274	2,434
	1899	11,843	11,570	25	38	79	131	861
Hosiery and knit goods.....	1914	125,842	80,884	14,643	1,108	26,284	2,923	46,117
	1909	103,709	74,760	12,038	1,235	13,286	2,390	25,485
	1904	78,769	57,460	13,532	668	4,648	2,461	9,724
	1899	57,346	39,697	14,824	206	1,304	1,315	2,049
Ice, manufactured.....	1914	461,988	414,685	2,727	12,535	28,991	3,050	50,546
	1909	317,789	304,685	2,262	3,264	5,414	2,164	14,253
	1904	191,680	186,549	1,075	618	1,068	2,350	4,579
	1899	100,421	98,722	807	193	389	310	1,881
Iron and steel, blast furnaces..	1914	1,222,273	1,005,374	1,261	194,037	21,601	-----	212,582
	1909	1,173,422	1,033,033	309	125,230	14,850	-----	135,143
	1904	773,278	768,702	680	3,757	139	-----	52,610
	1899	497,272	496,568	582	122	-----	-----	8,693
Iron and steel, steel works and rolling mills.	1914	2,706,553	2,435,319	12,321	73,752	182,204	2,957	1,207,715
	1909	2,100,978	1,956,846	5,829	79,391	58,797	115	716,609
	1904	1,649,299	1,618,480	4,795	11,806	6,798	7,420	254,258
	1899	1,100,801	1,090,057	8,067	1,543	877	257	64,658
Iron and steel, bolts, nuts, washers, and rivets, not made in steel works or rolling mills.	1914	28,897	12,004	1,190	2,040	13,651	12	18,562
	1909	22,113	14,838	954	2,066	4,179	76	8,625
	1904	13,825	11,582	461	821	717	244	2,888
	1899	9,165	7,627	935	275	145	183	1,815
Iron and steel forgings, not made in steel works or rolling mills.	1914	38,215	16,883	780	1,832	17,048	1,672	25,076
	1909	27,803	20,011	520	2,608	4,570	94	11,493
	1904	16,069	13,918	904	672	313	262	1,945
	1899	7,697	6,419	975	113	111	79	159
Jewelry.....	1914	15,666	2,271	145	1,013	10,433	1,804	11,392
	1909	11,204	2,748	200	694	5,179	2,383	5,759
	1904	7,872	2,448	92	354	2,799	2,179	2,974
	1899	6,656	2,097	228	175	1,551	2,605	1,677

<sup>1</sup> Includes for 1914 and 1909 some establishments manufacturing suspenders, garters, and elastic woven goods, which were classified under "rubber goods, not elsewhere specified," or under "millinery and lace goods" in 1904 and 1899.



## HORSEPOWER USED IN 105 LEADING INDUSTRIES: 1914, 1909, 1904, AND 1899—Continued.

Table 216—Continued.

Table 216—Continued.	Census year.	PRIMARY HORSEPOWER.						Electric horsepower owned and rented.
		Total.	Owned.			Rented.		
			Steam engines and turbines.	Water wheels and motors.	Internal-combustion engines.	Electric.	Other.	
Industries with over 10,000 wage earners in 1914—Contd.								
Leather goods.....	1914	21,478	9,635	673	1,142	9,897	131	13,239
	1909	28,148	10,028	1,373	1,381	14,946	420	16,663
	1904	16,257	9,286	1,409	1,017	3,641	904	4,578
	1899	10,947	7,158	679	747	1,553	810	1,685
Leather, tanned, curried, and finished.	1914	172,712	140,299	1,868	7,997	21,570	978	73,424
	1909	148,140	131,451	1,556	7,231	6,487	1,415	35,919
	1904	117,450	107,550	1,955	5,086	2,014	845	14,539
	1899	88,860	84,232	2,231	866	863	668	3,920
Lime <sup>1</sup> .....	1914	39,134	25,388	316	2,122	11,253	55	12,851
	1909	27,671	24,271	441	1,418	1,497	44	2,560
	1904	18,198	16,742	243	698	475	40	1,231
	1899	93,540	89,647	2,339	549	867	138	5,372
Liquors, malt.....	1914	405,884	371,291	685	3,752	29,321	835	111,958
	1909	347,726	331,770	340	1,261	14,190	165	66,519
	1904	266,159	261,280	678	647	3,369	185	22,508
	1899	197,901	196,589	319	394	540	59	7,172
Locomotives, not made by railroad companies. <sup>2</sup>	1914	50,373	35,762	450	8,380	5,781	-----	76,846
	1909	35,102	28,831	200	4,520	1,551	-----	40,504
	1904	29,806	26,557	1,230	545	1,474	-----	13,267
Lumber and timber products..	1914	2,796,902	2,498,746	94,103	45,694	149,152	9,207	306,540
	1909	2,840,082	2,588,323	140,503	38,628	62,200	10,428	130,707
	1904	1,886,624	1,722,829	119,461	16,897	14,181	13,256	33,517
	1899	1,658,594	1,480,098	159,644	16,820	2,032	( <sup>3</sup> )	11,315
Marble and stone work <sup>5</sup> .....	1914	207,461	110,156	16,433	12,529	66,997	1,346	94,976
	1909	187,686	132,477	9,618	10,874	32,062	2,655	53,748
	1904	102,887	82,700	6,281	5,390	6,838	1,678	11,278
	1899	83,119	71,642	6,247	1,687	2,139	1,404	3,814
Mattresses and spring beds.....	1914	21,674	5,209	170	1,769	14,363	163	15,412
	1909	17,689	6,206	378	2,639	8,315	151	10,192
	1904	13,220	7,893	318	1,510	2,922	577	3,350
	1899	7,980	5,656	198	748	927	451	971
Millinery and lace goods <sup>6</sup> .....	1914	12,736	4,832	715	378	6,563	248	7,883
	1909	7,918	2,869	117	561	4,048	323	4,560
	1904	4,737	2,192	46	270	1,663	566	2,110
	1899	1,852	752	18	125	741	216	743
Mineral and soda waters.....	1914	25,164	7,935	319	5,466	11,001	443	11,883
	1909	19,392	8,678	375	4,580	5,504	255	6,218
	1904	12,214	7,426	414	2,370	1,760	244	1,908
	1899	8,037	6,385	113	933	465	141	541
Musical instruments, pianos and organs and materials.	1914	44,349	32,792	643	1,592	9,046	276	21,492
	1909	41,623	33,325	1,106	1,271	5,355	566	13,226
	1904	30,134	25,706	867	741	1,932	888	5,085
	1899	20,789	18,261	872	311	493	852	1,457
Oil, cottonseed, and cake.....	1914	249,781	218,872	1,035	6,748	23,126	-----	30,893
	1909	192,342	183,629	175	1,674	6,394	470	10,855
	1904	180,246	148,914	559	115	658	-----	3,079
	1899	73,071	71,644	785	117	360	165	1,297
Paint and varnish.....	1914	70,611	43,881	1,426	3,226	19,035	3,043	34,917
	1909	56,162	42,191	2,006	3,290	7,814	861	17,037
	1904	41,288	34,952	997	1,673	2,650	1,016	7,540
	1899	30,443	27,215	950	501	856	921	1,788

<sup>1</sup> "Lime" for 1899 includes "cement" and "wall plaster."<sup>2</sup> "Foundry and machine-shop products" for 1899 includes "stoves and furnaces, including gas and oil stoves," and "locomotives, not made by railroad companies."<sup>3</sup> Includes "other" owned and rented power.<sup>4</sup> Included in internal-combustion engines.<sup>5</sup> "Marble and stone work" for 1899 includes "artificial stone products."<sup>6</sup> Includes for 1904 and 1899 some establishments manufacturing suspenders, garters, and elastic woven goods, which were classified under "furnishing goods, men's," in 1914 and 1909.

## HORSEPOWER USED IN 105 LEADING INDUSTRIES: 1914, 1909, 1904, AND 1899—Continued.

Table 216—Continued.

Table 216—Continued.		PRIMARY HORSEPOWER.							Electric horse- power owned and rented.
INDUSTRY.	Census year.	Total.	Owned.			Rented.			
			Steam engines and turbines.	Water wheels and motors.	In- ternal- com- bustion engines.	Electric.	Other.		
Industries with over 10,000 wage earners in 1914—Contd.									
Paper and wood pulp.....	1914	1,621,154	597,840	876,741	9,674	127,699	9,200	325,211	
	1909	1,304,265	469,364	788,146	6,675	38,610	1,470	130,120	
	1904	1,093,708	370,852	717,989	1,916	2,748	203	31,604	
	1899	762,118	256,034	504,762	1,062	85	175	2,814	
Paper goods, not elsewhere specified.	1914	35,307	23,267	1,354	649	9,501	536	20,415	
	1909	27,067	19,246	1,340	576	5,245	660	12,680	
	1904	16,226	13,541	285	225	1,593	582	3,990	
	1899	10,421	8,651	277	303	427	763	887	
Patent medicines and com- pounds and druggists' pre- parations.	1914	28,872	15,908	179	2,000	10,422	363	17,924	
	1909	25,659	16,059	264	1,712	6,882	742	11,175	
	1904	17,008	12,465	173	983	2,468	919	4,894	
	1899	12,707	10,200	231	419	1,001	856	1,881	
Paving materials.....	1914	138,026	87,852	100	3,306	46,604	164	52,819	
	1909	5,757	5,312	-----	193	252	-----	1,630	
	1904	5,156	5,002	-----	14	140	-----	1,000	
	1899	34,397	33,508	90	230	464	105	597	
Petroleum, refining.....	1914	128,468	94,052	1,487	18,298	14,353	278	38,614	
	1909	90,268	84,085	-----	5,870	28	285	8,808	
	1904	46,019	43,810	-----	2,059	150	-----	3,468	
	1899	36,127	35,418	-----	709	-----	-----	925	
Printing and publishing.....	1914	335,210	57,583	1,388	27,435	246,697	2,107	283,206	
	1909	297,763	59,334	2,320	32,152	197,692	6,265	229,312	
	1904	166,380	54,957	3,332	24,964	75,479	7,648	93,219	
	1899	119,775	56,129	2,821	15,115	33,582	12,128	41,413	
Rubber goods, not elsewhere specified. <sup>1</sup>	1914	151,927	121,144	3,273	1,605	25,664	241	93,998	
	1909	79,062	72,010	2,455	398	3,499	700	18,848	
	1904	48,381	44,726	1,984	307	1,096	268	8,596	
	1899	40,835	36,847	3,120	48	197	623	891	
Sewing machines, cases, and attachments.	1914	24,229	21,066	291	219	2,434	219	19,378	
	1909	19,426	18,131	291	62	897	45	14,063	
	1904	17,162	16,301	452	66	274	69	4,694	
	1899	10,069	8,966	740	211	34	118	323	
Shipbuilding, including boat building.	1914	115,333	79,599	94	5,336	30,085	219	66,275	
	1909	88,063	75,180	86	3,503	9,264	30	35,334	
	1904	78,127	73,657	87	1,785	2,367	231	17,630	
	1899	61,797	58,174	1,700	645	975	303	7,177	
Silk goods, including throw- sters.	1914	116,924	78,302	7,605	1,762	23,748	5,507	47,401	
	1909	97,947	72,059	8,383	1,277	10,354	5,874	23,758	
	1904	71,760	56,717	6,974	937	2,393	4,739	9,521	
	1899	57,397	45,967	6,666	323	609	3,832	4,607	
Silverware and plated ware....	1914	18,738	11,662	815	726	5,190	345	10,968	
	1909	15,183	10,355	695	782	2,937	414	7,319	
	1904	12,873	8,679	802	198	1,630	1,564	3,637	
	1899	8,486	6,163	665	381	403	874	965	
Slaughtering and meat pack- ing.	1914	260,996	213,012	15	2,833	44,059	1,077	122,956	
	1909	208,707	190,666	46	2,208	15,047	740	78,677	
	1904	119,311	114,640	311	740	3,441	179	40,538	
	1899	87,060	85,244	13	560	1,127	116	11,304	
Smelting and refining, copper..	1914	194,980	147,535	10,000	825	36,620	-----	88,213	
	1909	153,126	114,881	12,725	1,107	29,413	-----	55,229	
	1904	76,524	62,735	9,400	1,274	3,115	-----	12,419	
	1899	61,630	51,826	9,467	337	-----	-----	4,612	
Soap <sup>2</sup> .....	1914	35,737	29,805	166	120	4,014	1,632	16,960	
	1909	28,360	24,538	255	245	1,974	1,348	12,839	
	1904	20,228	18,750	53	88	517	820	4,410	
	1899	17,514	16,941	187	15	120	251	1,064	

<sup>1</sup> Includes for 1904 and 1899 some establishments manufacturing suspenders, garters, and elastic woven goods, which were classified under "furnishing goods, men's," in 1914 and 1909.

<sup>2</sup> Includes for 1899 "candles."

HORSEPOWER USED IN 105 LEADING INDUSTRIES: 1914, 1909, 1904, AND 1899—Continued.

Table 216<sup>a</sup>—Continued.

INDUSTRY.	Census year.	PRIMARY HORSEPOWER.						Electric horsepower owned and rented.
		Total.	Owned.			Rented.		
			Steam engines and turbines.	Water wheels and motors.	Internal-combustion engines.	Electric.	Other.	
<i>Industries with over 10,000 wage earners in 1914—Contd.</i>								
Stoves and furnaces, including gas and oil stoves. <sup>1</sup>	1914	49,150	27,007	124	3,418	18,506	95	30,843
	1909	45,524	32,993	259	3,060	8,966	246	18,159
	1904	32,017	26,013	555	2,241	2,831	377	6,794
Sugar, refining <sup>2</sup> .....	1914	49,666	45,407	-----	69	4,190	-----	24,016
	1909	38,414	37,453	-----	15	946	-----	14,735
Tobacco manufactures.....	1914	38,737	25,853	257	680	11,766	181	21,555
	1909	28,514	21,936	245	795	5,367	171	11,203
	1904	24,604	21,413	257	593	1,941	400	6,515
	1899	22,296	20,665	438	338	411	444	2,989
Turpentine and rosin.....	1914	2,478	1,669	20	789	-----	-----	2
	1909	4,129	3,877	14	231	-----	7	-----
	1904	1,175	1,172	3	-----	-----	-----	-----
	1899	866	866	-----	-----	-----	-----	-----
Typewriters and supplies.....	1914	10,887	8,781	110	178	1,803	15	7,347
	1909	6,845	5,525	70	173	990	87	4,743
	1904	4,455	3,396	195	83	554	227	1,546
	1899	2,272	1,696	355	54	64	103	570
Wire.....	1914	83,940	63,015	993	3,429	16,463	40	39,458
	1909	71,959	63,516	2,151	3,256	3,031	5	18,824
	1904	25,856	23,696	1,054	759	347	-----	1,710
	1899	9,979	8,695	1,200	39	-----	45	135
Wirework, including wire rope and cable, not elsewhere specified.	1914	21,547	9,075	393	1,546	10,391	142	14,305
	1909	20,131	10,553	930	2,492	5,642	514	8,891
	1904	18,280	12,786	714	2,154	2,000	626	5,119
	1899	12,772	10,240	653	862	451	566	973
Wood, turned and carved.....	1914	43,334	33,441	4,151	1,787	3,162	793	4,330
	1909	48,447	37,231	5,311	1,829	2,283	1,793	2,966
	1904	47,595	38,379	5,250	1,047	692	2,227	993
	1899	31,133	22,398	4,809	754	327	2,845	376
Woolen, worsted, and felt goods, and wool hats.	1914	398,367	288,720	76,259	2,654	25,047	5,687	144,244
	1909	362,209	261,364	79,250	2,077	13,783	5,735	79,223
	1904	288,969	200,035	76,366	1,705	3,930	6,933	22,222
	1899	244,825	163,170	75,911	411	4,798	535	7,303
<i>Other industries with over 20,000 horsepower in 1914.</i>								
Belting and hose, woven and rubber.	1914	25,751	18,672	523	244	6,221	91	15,710
	1909	20,547	14,160	770	2,008	3,537	72	6,460
	1904	13,491	11,696	950	33	657	155	904
	1899	5,612	4,779	625	-----	23	185	23
Cash registers and calculating machines.	1914	20,319	8,339	200	-----	11,780	-----	12,145
	1909	6,944	5,329	47	218	1,125	225	5,258
	1904	4,139	3,701	55	200	138	45	2,478
	1899	1,340	1,250	35	19	21	15	821
Coffee and spice, roasting and grinding. <sup>3</sup>	1914	26,634	7,468	100	1,085	17,903	78	22,278
	1909	22,334	8,825	159	992	12,205	153	22,413
	1904	15,703	9,327	188	700	5,037	451	8,160
	1899	16,270	11,497	127	778	2,916	952	5,331
Dyestuffs and extracts.....	1914	23,290	22,032	56	455	745	2	2,750
	1909	22,213	21,685	320	15	191	2	1,664
	1904	17,671	17,424	196	4	20	27	659
	1899	11,409	10,508	325	300	20	256	179

<sup>1</sup> "Foundry and machine-shop products" for 1899 include "stoves and furnaces, including gas and oil stoves" and "locomotives, not made by railroad companies."

<sup>2</sup> Figures not available for 1904 and 1899.

<sup>3</sup> Includes for 1899 "peanuts, grading, roasting, cleaning, and shelling."

HORSEPOWER USED IN 105 LEADING INDUSTRIES: 1914, 1909, 1904, AND 1899—Continued.

Table 216—Continued.

INDUSTRY.	Census year.	PRIMARY HORSEPOWER.						Elec- tric horse- power owned and rented.
		Total.	Owned.			Rented.		
			Steam engines and turbines.	Water wheels and motors.	In- ternal- com- bustion engines.	Electric.	Other.	
<i>Other industries with over 20,000 horsepower in 1914—Contd.</i>								
Explosives.....	1914	45,778	36,304	1,518	62	7,894	.....	25,560
	1909	28,601	25,558	2,689	221	133	.....	14,836
	1904	29,665	22,061	7,177	427	.....	.....	7,889
	1899	19,195	13,339	5,674	72	110	.....	2,995
Glucose and starch.....	1914	41,639	38,003	893	102	2,456	185	29,276
	1909	28,257	27,835	185	49	163	25	27,230
	1904	35,986	33,406	2,180	81	169	150	12,890
	1899	26,642	24,655	1,895	10	63	19	1,888
Liquors, distilled.....	1914	51,971	49,567	134	442	1,527	301	7,361
	1909	46,120	44,773	252	321	708	66	3,786
	1904	42,349	41,313	410	532	41	53	813
	1899	31,427	30,820	377	81	100	49	352
Malt.....	1914	33,394	24,318	375	65	7,736	900	21,155
	1909	26,441	20,417	197	240	5,267	320	9,911
	1904	20,288	17,633	631	324	1,515	185	3,298
	1899	13,834	12,570	675	98	376	115	995
Minerals and earths, ground ...	1914	44,069	25,811	7,277	1,476	9,503	2	11,378
	1909	20,920	13,029	6,283	209	1,375	24	1,664
	1904	17,325	12,061	4,414	179	290	381	305
	1899	18,404	10,208	7,750	85	20	341	50
Oilcloth and linoleum, floor....	1914	22,272	15,486	.....	480	6,306	.....	14,965
	1909	16,125	15,046	.....	2	1,002	75	4,540
	1904	10,112	9,937	.....	47	93	35	1,275
	1899	7,561	7,561	.....	.....	.....	.....	718
Salt.....	1914	29,007	24,900	78	779	3,250	.....	7,742
	1909	27,263	25,118	108	782	1,241	14	3,425
	1904	19,434	18,556	33	439	196	210	664
	1899	23,865	23,625	8	182	25	25	220
Smelting and refining, lead....	1914	29,734	20,387	.....	145	9,202	.....	19,737
	1909	26,954	23,090	.....	35	3,829	.....	12,166
	1904	25,667	22,440	1	100	3,126	.....	10,107
	1899	16,342	14,400	373	159	1,410	.....	2,020
Smelting and refining, zinc....	1914	36,705	33,564	300	1,751	1,090	.....	24,554
	1909	21,457	19,952	192	1,313	.....	.....	8,448
	1904	18,404	18,356	.....	48	.....	.....	5,048
	1899	11,145	11,095	.....	50	.....	.....	1,401
Sugar, beet.....	1914	76,705	70,507	195	928	5,075	.....	17,871
	1909	57,202	54,369	~200	543	2,090	.....	8,868
	1904	35,490	35,016	429	40	5	.....	4,702
	1899	14,460	14,442	.....	18	.....	.....	2,388
Sugar, cane <sup>1</sup> .....	1914	113,246	112,776	.....	438	32	.....	2,769
	1909	122,189	121,439	.....	380	370	.....	3,995
Sulphuric, nitric, and mixed acids. <sup>2</sup>	1914	24,927	17,096	.....	1,525	2,381	3,925	12,994
	1909	6,494	5,083	.....	371	878	162	2,230
	1904	5,416	4,840	.....	161	415	.....	540
Wall plaster <sup>3</sup> .....	1914	36,626	18,730	706	2,201	14,962	27	17,684
	1909	25,892	19,095	845	1,260	4,517	175	6,167
	1904	20,054	16,161	1,580	1,084	1,059	170	1,640
All other industries.....	1914	831,020	494,203	26,352	53,026	247,833	9,606	438,610
	1909	636,199	447,419	32,681	35,883	107,197	13,019	206,575
	1904	632,353	528,267	29,586	20,026	35,903	18,571	84,644
	1899	665,773	557,685	33,371	12,572	29,701	32,444	46,596

<sup>1</sup> Figures not available for 1904 and 1899.<sup>2</sup> "Chemicals" for 1899 include "sulphuric, nitric, and mixed acids," and "wood distillation, not including turpentine and rosin."<sup>3</sup> "Lime" for 1899 includes "cement" and "wall plaster."

# POWER USED IN MANUFACTURING.

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## HORSEPOWER USED IN MANUFACTURING INDUSTRIES, BY DIVISIONS AND STATES: 1869-1914.

Table 217	DIVISION AND STATE.	Census year.	PRIMARY HORSEPOWER.						Electric horsepower owned and rented.
			Total.	Owned.			Rented.		
				Steam engines and turbines. <sup>1</sup>	Water wheels and motors.	Internal-combustion engines.	Electric.	Other.	
UNITED STATES.....	1914	22,547,574	15,681,688	1,826,443	991,905	3,917,655	129,883	8,847,622	
	1909	18,675,376	14,228,632	1,822,888	751,186	1,749,031	123,639	4,817,140	
	1904	13,487,707	10,917,502	1,647,880	289,423	441,589	191,313	1,592,475	
	1899	10,097,893	8,189,564	1,454,112	134,742	182,562	136,913	492,936	
	1889	5,938,635	4,586,089	1,255,045	8,930	.....	88,571	15,569	
	1879	3,410,837	2,185,458	1,225,379	.....	.....	.....	.....	
1869	2,346,142	1,215,711	1,130,431	.....	.....	.....	.....		
GEOGRAPHIC DIVISIONS: New England.....	1914	3,125,029	1,874,128	757,582	49,229	419,197	25,493	1,107,677	
	1909	2,715,121	1,658,966	757,332	41,801	218,642	38,380	663,143	
	1904	2,125,815	1,342,503	659,071	18,068	58,745	47,428	187,194	
	1899	1,792,342	1,098,885	619,209	9,978	31,613	32,657	65,951	
	1889	1,156,877	634,316	497,031	545	.....	24,985	3,094	
	1879	743,106	320,201	422,905	.....	.....	.....	.....	
1869	514,730	152,704	362,026	.....	.....	.....	.....		
Middle Atlantic.....	1914	6,609,576	4,730,955	454,158	372,617	1,083,618	58,228	2,924,489	
	1909	5,531,502	4,163,398	470,488	274,274	568,723	54,619	1,737,236	
	1904	4,255,264	3,369,872	514,951	121,567	141,588	107,286	638,209	
	1899	3,139,128	2,552,354	410,173	45,751	74,256	56,594	201,201	
	1889	1,939,042	1,567,822	331,964	3,044	.....	36,212	5,096	
	1879	1,066,409	709,719	356,690	.....	.....	.....	.....	
1869	756,420	380,350	376,070	.....	.....	.....	.....		
East North Central...	1914	5,464,935	3,856,501	217,164	332,269	1,029,544	29,457	2,526,265	
	1909	4,382,070	3,496,184	208,441	283,450	375,876	18,119	1,297,447	
	1904	3,120,369	2,716,307	194,871	90,481	95,188	23,522	432,162	
	1899	2,401,808	2,127,110	171,077	45,244	30,693	27,684	124,520	
	1889	1,327,784	1,153,118	155,245	2,578	.....	16,843	3,839	
	1879	808,033	650,386	157,647	.....	.....	.....	.....	
1869	530,810	380,984	149,826	.....	.....	.....	.....		
West North Central..	1914	1,241,940	815,759	94,957	66,970	260,413	3,841	513,405	
	1909	1,101,990	839,927	86,330	57,434	115,002	3,297	266,534	
	1904	753,700	628,287	63,659	25,156	32,976	3,622	80,029	
	1899	605,098	515,208	51,999	17,905	14,519	5,467	31,476	
	1889	410,231	345,697	60,005	832	.....	3,697	1,256	
	1879	220,647	149,524	71,123	.....	.....	.....	.....	
1869	126,532	89,274	37,258	.....	.....	.....	.....		
South Atlantic.....	1914	2,274,785	1,599,018	176,864	72,429	417,927	8,547	716,639	
	1909	1,832,001	1,436,744	183,158	36,441	171,146	4,512	343,393	
	1904	1,221,040	1,034,544	137,018	16,677	28,914	3,887	100,465	
	1899	851,050	705,517	124,830	6,834	5,196	8,673	24,257	
	1889	468,009	319,801	145,397	778	.....	2,033	708	
	1879	294,186	148,618	145,568	.....	.....	.....	.....	
1869	209,814	70,085	139,729	.....	.....	.....	.....		
East South Central...	1914	1,157,367	975,428	23,627	16,180	141,419	713	247,815	
	1909	1,036,560	955,201	29,315	12,270	38,580	1,194	108,409	
	1904	753,928	716,924	24,193	3,714	8,060	1,037	28,757	
	1899	513,425	480,552	25,107	2,209	3,833	1,724	9,619	
	1889	304,291	268,106	34,850	299	.....	1,036	260	
	1879	152,907	110,085	42,822	.....	.....	.....	.....	
1869	108,772	65,154	40,618	.....	.....	.....	.....		
West South Central ..	1914	1,010,050	873,649	4,549	55,275	75,547	1,030	163,239	
	1909	873,350	808,153	3,108	29,291	31,807	991	78,893	
	1904	555,717	539,507	3,236	4,308	8,273	393	20,152	
	1899	397,471	388,179	2,760	1,956	3,992	584	5,778	
	1889	136,992	131,772	4,552	377	.....	291	651	
	1879	57,613	52,991	4,622	.....	.....	.....	.....	
1869	45,756	42,239	3,517	.....	.....	.....	.....		
Mountain.....	1914	463,478	330,041	23,511	6,871	102,293	762	190,525	
	1909	400,766	307,010	21,543	4,188	66,956	1,069	113,984	
	1904	241,825	208,326	18,319	2,296	12,105	779	35,419	
	1899	123,012	99,153	18,161	1,237	4,031	430	8,545	
	1889	47,391	40,126	6,779	111	.....	375	172	
	1879	17,031	8,319	8,712	.....	.....	.....	.....	
1869	16,838	9,546	7,292	.....	.....	.....	.....		

<sup>1</sup> Figures include "other" owned power as follows: 1909, 29,293 horsepower; 1904, 92,154 horsepower; 1899, 49,985 horsepower; 1889, 4,784 horsepower.

HORSEPOWER USED IN MANUFACTURING INDUSTRIES, BY DIVISIONS AND STATES:  
1869-1914—Continued.

Table 217—Continued.		PRIMARY HORSEPOWER.						Electric horse-power owned and rented.	
DIVISION AND STATE.	Census year.	Total.	Owned.			Rented.			
			Steam engines and turbines.	Water wheels and motors.	Internal-combustion engines.	Electric.	Other.		
GEOGRAPHIC DIVISIONS—Continued.									
Pacific.....		1914	1,109,814	626,209	74,031	20,065	387,697	1,812	457,568
	1909	802,016	563,049	63,173	12,037	162,299	1,458	208,101	
	1904	400,049	361,232	32,562	7,156	55,740	3,359	70,088	
	1899	274,559	222,606	30,796	3,628	14,429	3,100	21,589	
	1889	148,018	125,331	19,222	366		3,099	493	
	1879	50,905	35,615	15,290					
	1869	36,470	22,375	14,095					
New England:									
Maine.....		1914	487,211	176,792	258,314	4,582	46,344	1,179	107,700
	1909	459,599	168,774	258,392	3,933	27,203	1,297	54,266	
	1904	343,627	127,288	203,094	3,063	8,061	2,121	26,587	
	1899	259,232	89,477	158,788	2,178	7,572	1,217	9,659	
	1889	150,317	42,835	104,602	10		2,870	191	
	1879	100,476	20,759	79,717					
	1869	79,573	9,465	70,108					
New Hampshire.....		1914	344,093	161,001	128,592	1,841	49,171	3,488	102,612
	1909	293,991	139,158	128,011	1,238	21,209	4,375	45,351	
	1904	218,344	102,930	100,274	1,395	5,013	8,732	12,301	
	1899	200,975	90,267	105,711	571	2,004	2,422	3,471	
	1889	116,788	46,988	68,842	3		955	42	
	1879	87,750	18,595	69,155					
	1869	77,078	8,787	68,291					
Vermont.....		1914	173,937	62,860	80,400	2,301	27,477	899	47,161
	1909	159,445	64,667	79,062	2,160	12,917	639	21,233	
	1904	140,616	57,025	76,237	1,483	4,550	1,321	7,238	
	1899	126,124	44,455	77,421	1,120	1,444	1,684	2,173	
	1889	98,520	23,625	74,041	10		844	34	
	1879	63,314	11,088	52,226					
	1869	51,322	6,425	44,897					
Massachusetts.....		1914	1,396,722	970,506	189,825	20,242	200,339	15,810	582,971
	1909	1,175,071	835,596	186,516	18,326	109,996	24,637	402,492	
	1904	938,007	694,455	183,427	7,487	27,073	25,565	91,012	
	1899	796,061	578,086	181,907	4,074	13,409	18,585	32,828	
	1889	515,570	341,042	158,932	289		15,307	2,327	
	1879	309,759	171,397	138,362					
	1869	184,356	78,502	105,854					
Rhode Island.....		1914	269,854	199,170	33,649	2,493	31,572	2,970	91,224
	1909	226,740	175,332	31,417	3,300	13,697	2,994	42,130	
	1904	181,017	141,082	29,231	1,247	5,815	3,642	15,477	
	1899	153,619	118,330	28,171	427	2,969	3,722	4,895	
	1889	112,654	83,528	27,197	18		1,911	295	
	1879	63,575	41,335	22,240					
	1869	42,027	23,546	18,481					
Connecticut.....		1914	453,812	303,799	66,802	17,770	64,294	1,147	176,009
	1909	400,275	275,439	73,934	12,844	33,620	4,438	97,671	
	1904	304,204	219,723	66,808	3,393	8,233	6,047	34,579	
	1899	256,331	178,270	67,211	1,608	4,215	5,027	12,925	
	1889	163,028	96,298	63,417	215		3,098	205	
	1879	118,232	57,027	61,205					
	1869	80,374	25,979	54,395					
MIDDLE ATLANTIC:									
New York.....		1914	2,356,655	1,165,731	392,932	118,330	644,824	34,838	1,043,132
	1909	1,997,662	1,084,460	395,618	99,899	389,945	27,740	689,976	
	1904	1,516,592	855,275	446,134	44,288	95,284	75,611	222,111	
	1899	1,099,931	665,760	335,411	16,221	47,768	34,771	77,598	
	1889	774,373	514,701	231,959	1,990		25,723	2,447	
	1879	454,143	234,795	219,348					
	1869	334,363	126,107	208,256					
New Jersey.....		1914	793,063	642,608	15,901	30,592	94,605	9,357	352,206
	1909	612,293	529,848	19,076	20,867	33,157	8,745	182,475	
	1904	436,274	390,095	18,197	9,070	10,603	8,309	69,301	
	1899	322,503	288,956	20,161	3,284	4,126	5,976	15,857	
	1889	180,042	158,802	17,543	135		3,562	487	
	1879	99,858	72,792	27,066					
	1869	58,139	32,307	25,832					

HORSEPOWER USED IN MANUFACTURING INDUSTRIES, BY DIVISIONS AND STATES:  
1869-1914—Continued.

Table 217—Continued.

DIVISION AND STATE.	Census year.	PRIMARY HORSEPOWER.						Electric horsepower owned and rented.
		Total.	Owned.			Rented.		
			Steam engines and turbines.	Water wheels and motors.	Internal-combustion engines.	Electric.	Other.	
<b>MIDDLE ATLANTIC—Con.</b>								
Pennsylvania.....	1914	3,549,858	2,922,616	45,325	223,695	344,189	14,033	1,529,151
	1909	2,921,547	2,549,090	55,194	153,508	145,621	18,134	864,785
	1904	2,302,398	2,124,502	50,620	68,209	35,701	23,366	346,797
	1899	1,716,694	1,597,638	54,601	26,246	22,362	15,847	107,746
	1889	984,627	894,319	82,462	919	.....	6,927	2,162
	1879	512,408	402,132	110,276	.....	.....	.....	.....
	1869	363,918	221,936	141,982	.....	.....	.....	.....
<b>EAST NORTH CENTRAL:</b>								
Ohio.....	1914	2,002,780	1,541,212	14,443	156,481	283,514	7,130	823,000
	1909	1,583,155	1,363,720	16,107	103,801	93,592	5,935	417,844
	1904	1,116,932	1,034,780	18,149	35,101	23,159	5,743	144,467
	1899	783,665	734,973	17,848	14,230	8,768	7,846	42,157
	1889	417,078	382,673	27,342	1,183	.....	5,880	1,705
	1879	261,143	222,502	38,641	.....	.....	.....	.....
	1869	174,323	129,577	44,746	.....	.....	.....	.....
Indiana.....	1914	709,703	430,504	9,905	66,691	200,882	1,721	450,357
	1909	633,377	449,127	7,893	109,105	65,548	1,704	233,193
	1904	380,758	338,853	9,685	21,171	9,082	1,967	33,582
	1899	325,919	297,216	11,964	12,295	2,764	1,680	7,903
	1889	190,575	172,540	16,181	176	.....	1,678	323
	1879	131,770	109,960	21,810	.....	.....	.....	.....
	1869	100,369	76,851	23,518	.....	.....	.....	.....
Illinois.....	1914	1,305,930	947,949	12,310	61,500	272,662	11,509	681,474
	1909	1,013,071	839,632	12,691	37,025	117,007	6,716	398,621
	1904	741,555	660,687	15,930	12,319	41,978	11,541	165,265
	1899	559,347	511,879	11,614	8,758	12,471	14,625	49,235
	1889	285,727	262,274	15,992	708	.....	6,753	939
	1879	144,288	126,843	17,445	.....	.....	.....	.....
	1869	86,044	73,091	12,953	.....	.....	.....	.....
Michigan.....	1914	764,183	516,771	31,711	19,593	192,502	3,606	315,766
	1909	598,288	465,536	42,019	13,988	74,270	2,475	133,064
	1904	440,890	376,198	39,342	10,534	12,411	2,405	39,970
	1899	368,497	319,980	36,529	5,603	4,264	2,121	12,088
	1889	256,031	214,825	38,986	237	.....	1,983	577
	1879	164,747	130,352	34,395	.....	.....	.....	.....
	1869	105,851	70,956	34,895	.....	.....	.....	.....
Wisconsin.....	1914	682,339	420,065	148,795	28,004	79,984	5,491	255,668
	1909	554,179	378,169	129,731	19,531	25,459	1,289	114,725
	1904	440,234	305,789	112,665	11,356	8,558	1,866	48,878
	1899	364,380	263,062	93,122	4,358	2,426	1,412	3,137
	1889	178,373	120,806	56,744	274	.....	549	295
	1879	106,085	60,729	45,356	.....	.....	.....	.....
	1869	64,223	30,509	33,714	.....	.....	.....	.....
<b>WEST NORTH CENTRAL:</b>								
Minnesota.....	1914	358,737	206,144	73,341	7,454	71,224	574	121,018
	1909	297,670	199,802	59,570	7,174	30,297	827	52,212
	1904	220,934	168,115	38,245	4,710	8,594	1,270	14,427
	1899	180,124	146,826	24,932	3,624	3,769	973	6,300
	1889	112,537	83,630	27,300	126	.....	1,481	250
	1879	53,880	25,191	28,689	.....	.....	.....	.....
	1869	20,139	7,085	13,054	.....	.....	.....	.....
Iowa.....	1914	191,094	126,385	5,538	8,868	50,054	249	102,772
	1909	155,384	122,029	6,411	8,025	18,463	456	40,736
	1904	118,065	101,418	6,531	4,486	5,107	523	8,663
	1899	106,664	91,570	7,315	4,524	2,613	642	6,222
	1889	77,615	64,737	12,618	70	.....	190	194
	1879	54,221	33,858	20,363	.....	.....	.....	.....
	1869	39,547	25,298	14,249	.....	.....	.....	.....
Missouri.....	1914	391,385	283,490	3,203	18,321	84,362	2,009	181,981
	1909	340,467	280,494	3,738	11,159	44,056	1,020	106,941
	1904	247,861	223,879	3,727	4,960	13,965	1,330	37,671
	1899	189,117	173,802	3,113	3,279	5,624	3,299	12,725
	1889	144,567	137,758	4,755	457	.....	1,597	618
	1879	80,749	72,587	8,162	.....	.....	.....	.....
	1869	55,062	48,418	6,644	.....	.....	.....	.....

HORSEPOWER USED IN MANUFACTURING INDUSTRIES, BY DIVISIONS AND STATES:  
1869-1914—Continued.

Table 217—Continued.		PRIMARY HORSEPOWER.						Electric horse- power owned and rented.
DIVISION AND STATE.	Census year.	Total.	Owned.			Rented.		
			Steam engines and turbines.	Water wheels and motors.	Internal- combust- ion engines.	Electric.	Other.	
WEST NORTH CENTRAL— Continued.								
North Dakota <sup>1</sup> .....	1914	15,062	9,627	299	1,198	3,856	82	4,800
	1909	13,196	10,170	530	1,304	1,164	28	1,698
	1904	9,873	8,619	322	645	281	6	477
	1899	7,351	5,932	506	759	127	27	171
	1889	3,587	3,008	540	12	.....	27	2
South Dakota <sup>1</sup> .....	1914	16,324	8,972	574	2,364	4,414	.....	4,632
	1909	17,666	12,257	939	2,784	1,683	3	2,084
	1904	11,154	8,497	1,069	1,397	181	10	839
	1899	11,775	9,294	1,099	1,270	100	12	234
	1889	5,552	4,468	1,052	32	.....	.....	3
Nebraska.....	1914	90,192	58,066	5,674	6,724	19,701	27	33,720
	1909	64,466	44,882	7,436	4,408	7,530	210	15,942
	1904	46,372	34,625	7,221	2,035	2,364	127	8,126
	1899	41,825	31,176	7,513	1,919	866	351	2,398
	1889	23,430	17,070	6,123	58	.....	179	49
	1879	8,494	2,999	5,495	.....	.....	.....	.....
	1869	3,311	1,865	1,446	.....	.....	.....	.....
Kansas.....	1914	179,146	123,075	6,328	22,041	26,802	900	64,482
	1909	213,141	170,293	7,706	22,580	11,809	753	46,921
	1904	99,441	83,134	6,544	6,923	2,484	356	10,326
	1899	68,242	56,608	7,521	2,530	1,420	163	3,426
	1889	42,943	35,026	7,617	77	.....	223	110
	1879	21,079	13,468	7,611	.....	.....	.....	.....
	1869	8,149	6,360	1,789	.....	.....	.....	.....
SOUTH ATLANTIC:								
Delaware.....	1914	64,403	48,207	4,507	1,905	9,705	79	29,544
	1909	52,779	42,266	5,195	766	4,502	50	17,910
	1904	49,490	42,542	5,280	412	1,092	164	5,764
	1899	40,134	32,898	5,399	315	605	917	1,870
	1889	26,412	21,557	4,671	80	.....	104	104
	1879	15,428	10,643	4,785	.....	.....	.....	.....
	1869	8,533	4,313	4,220	.....	.....	.....	.....
Maryland.....	1914	263,753	196,199	9,935	13,822	42,243	1,554	117,707
	1909	218,244	182,395	12,074	5,736	17,108	931	44,921
	1904	165,449	145,627	10,777	4,377	3,309	1,359	18,823
	1899	132,052	116,115	10,415	3,139	733	1,650	4,174
	1889	73,335	56,548	15,633	175	.....	979	212
	1879	51,259	33,216	18,043	.....	.....	.....	.....
	1869	32,422	13,961	18,461	.....	.....	.....	.....
District of Columbia..	1914	24,775	15,230	540	2,568	6,407	30	9,522
	1909	16,563	12,212	775	1,073	2,433	70	4,527
	1904	12,592	10,567	710	311	996	8	1,761
	1899	10,255	8,777	369	338	100	671	348
	1889	11,374	10,422	810	91	.....	51	70
	1879	3,143	2,263	880	.....	.....	.....	.....
	1869	1,889	789	1,100	.....	.....	.....	.....
Virginia.....	1914	337,567	249,044	44,722	6,659	37,142	.....	102,013
	1909	283,928	221,341	45,155	3,664	13,356	412	42,043
	1904	176,998	144,552	25,946	1,715	4,403	382	12,687
	1899	136,696	110,607	23,550	748	822	969	5,617
	1889	82,343	45,418	36,654	78	.....	193	105
	1879	57,174	19,710	37,464	.....	.....	.....	.....
	1869	49,612	8,410	41,202	.....	.....	.....	.....
West Virginia.....	1914	278,504	216,976	5,554	28,537	27,152	285	66,676
	1909	217,496	184,591	10,617	16,705	5,330	253	28,543
	1904	138,578	124,735	6,404	6,569	776	94	5,199
	1899	91,894	85,139	5,425	1,045	27	258	454
	1889	55,452	44,802	10,542	33	.....	75	5
	1879	37,910	28,456	9,454	.....	.....	.....	.....
	1869	27,331	17,136	10,195	.....	.....	.....	.....

<sup>1</sup> The figures for Dakota Territory for the censuses preceding the separation of North Dakota and South Dakota are as follows: 1879, total primary horsepower, 2,224, steam power, 1,421, and water power, 803; 1869, total primary horsepower, 324, steam power, 248, and water power, 76.



HORSEPOWER USED IN MANUFACTURING INDUSTRIES, BY DIVISIONS AND STATES:  
1869-1914—Continued.

DIVISION AND STATE.	Census year.	PRIMARY HORSEPOWER.						Electric horsepower owned and rented.
		Total.	Owned.			Rented.		
			Steam engines and turbines.	Water wheels and motors.	Internal-combustion engines.	Electric.	Other.	
<b>SOUTH ATLANTIC—Con.</b>								
North Carolina.....	1914	508,085	331,132	41,181	5,379	128,660	1,733	163,161
	1909	378,556	272,979	41,926	2,356	60,044	1,251	86,002
	1904	216,622	183,213	28,382	2,102	2,423	502	5,553
	1899	154,467	123,328	29,241	388	894	616	2,733
	1889	73,301	41,360	31,812	42	-----	87	44
	1879	45,088	15,025	30,063	-----	-----	-----	-----
	1869	33,152	6,941	26,211	-----	-----	-----	-----
South Carolina.....	1914	340,224	207,480	42,413	2,063	83,754	4,514	111,988
	1909	276,378	195,452	38,497	1,264	41,130	35	67,620
	1904	197,479	157,612	31,097	239	8,451	80	32,162
	1899	112,697	81,283	27,586	323	185	3,320	6,061
	1889	45,673	29,103	16,399	97	-----	74	8
	1879	25,868	11,995	13,873	-----	-----	-----	-----
	1869	14,932	4,537	10,395	-----	-----	-----	-----
Georgia.....	1914	357,403	245,811	27,829	7,032	76,458	273	103,140
	1909	298,241	240,800	28,748	3,380	23,890	1,423	44,264
	1904	220,419	183,721	28,304	632	6,464	1,298	15,556
	1899	136,499	111,465	22,729	365	1,668	272	2,698
	1889	84,064	55,108	28,380	119	-----	457	157
	1879	51,169	21,102	30,067	-----	-----	-----	-----
	1869	38,243	10,826	27,417	-----	-----	-----	-----
Florida.....	1914	100,071	88,939	183	4,464	6,406	79	12,888
	1909	89,816	84,708	171	1,497	3,353	87	7,563
	1904	43,413	41,975	118	320	1,000	-----	2,960
	1899	36,356	35,905	116	173	162	-----	302
	1889	16,055	15,483	496	63	-----	13	3
	1879	7,147	6,208	939	-----	-----	-----	-----
	1869	3,700	3,172	528	-----	-----	-----	-----
<b>EAST SOUTH CENTRAL:</b>								
Kentucky.....	1914	238,314	206,871	3,968	6,581	20,382	512	49,168
	1909	230,224	208,506	5,377	4,724	11,314	303	31,268
	1904	174,625	163,719	4,603	1,938	3,874	491	10,690
	1899	144,161	136,378	4,247	1,096	1,722	718	3,415
	1889	82,408	75,590	6,271	223	-----	324	100
	1879	54,929	45,917	9,012	-----	-----	-----	-----
	1869	39,568	31,928	7,640	-----	-----	-----	-----
Tennessee.....	1914	286,857	216,156	9,395	3,435	57,858	13	83,107
	1909	242,277	215,342	9,777	1,853	14,666	639	29,536
	1904	175,780	162,044	9,995	1,084	2,230	427	6,586
	1899	130,318	116,753	11,078	593	1,370	524	2,193
	1889	84,273	68,551	15,451	54	-----	217	106
	1879	51,952	33,388	18,564	-----	-----	-----	-----
	1869	37,981	18,467	19,514	-----	-----	-----	-----
Alabama.....	1914	445,762	375,114	9,621	4,469	56,400	158	98,189
	1909	357,837	329,007	13,923	4,616	10,104	187	39,928
	1904	293,185	281,653	9,518	472	1,448	94	10,114
	1899	173,208	162,690	9,421	376	359	362	3,421
	1889	102,282	91,603	10,382	14	-----	283	51
	1879	27,576	15,779	11,797	-----	-----	-----	-----
	1869	18,751	7,740	11,011	-----	-----	-----	-----
Mississippi.....	1914	186,434	177,287	643	1,695	6,779	30	17,351
	1909	206,222	202,346	238	1,077	2,496	65	7,627
	1904	110,338	109,508	77	220	508	25	1,367
	1899	65,738	64,731	361	144	382	120	590
	1889	35,328	32,362	2,746	8	-----	212	3
	1879	18,450	15,001	3,449	-----	-----	-----	-----
	1869	12,472	10,019	2,453	-----	-----	-----	-----
<b>WEST SOUTH CENTRAL:</b>								
Arkansas.....	1914	177,208	167,378	793	2,979	5,956	102	13,340
	1909	173,088	168,204	674	1,374	2,581	255	7,417
	1904	109,509	107,858	584	482	484	101	2,191
	1899	79,560	78,244	734	326	201	55	480
	1889	38,313	36,368	1,778	7	-----	160	31
	1879	15,733	13,709	2,024	-----	-----	-----	-----
	1869	7,646	6,101	1,545	-----	-----	-----	-----

HORSEPOWER USED IN MANUFACTURING INDUSTRIES, BY DIVISIONS AND STATES.  
1869-1914—Continued.

Table 217—Continued.		PRIMARY HORSEPOWER.						Electric horse- power owned and rented.
DIVISION AND STATE.	Census year.	Total.	Owned.			Rented.		
			Steam engines and turbines.	Water wheels and motors.	Internal- combustion engines.	Electric.	Other.	
WEST SOUTH CENTRAL— Continued.								
Louisiana.....	1914	399,743	373,268	1,447	8,020	16,580	428	50,006
	1909	346,652	333,771	75	3,496	9,077	233	27,139
	1904	251,963	247,885	266	961	2,778	73	6,752
	1899	190,182	187,814	313	462	1,401	192	2,069
	1889	29,730	29,444	66	213	.....	7	454
	1879	11,346	11,256	90	.....	.....	.....	.....
	1869	25,066	24,924	142	.....	.....	.....	.....
Oklahoma <sup>1</sup> .....	1914	97,308	70,803	256	15,976	10,068	205	23,760
	1909	71,139	56,643	472	8,676	5,281	67	7,887
	1904	29,608	27,753	109	989	597	160	910
	1899	11,572	11,151	156	200	.....	65	12
	1889	585	510	75	.....	.....	.....	.....
Texas.....	1914	335,791	262,200	2,053	28,300	42,943	295	76,133
	1909	282,471	249,535	1,887	15,745	14,868	436	36,450
	1904	164,637	156,011	2,277	1,876	4,414	59	10,299
	1899	116,157	110,970	1,557	968	2,390	272	3,217
	1889	68,364	65,450	2,633	157	.....	124	166
	1879	30,534	28,026	2,508	.....	.....	.....	.....
	1869	13,044	11,214	1,830	.....	.....	.....	.....
MOUNTAIN:								
Montana.....	1914	91,671	52,918	10,135	820	27,798	.....	38,109
	1909	90,402	49,654	13,646	223	26,504	375	27,301
	1904	46,736	32,441	10,315	74	3,898	8	7,979
	1899	43,679	32,618	9,717	85	1,196	63	3,184
	1889	2,805	2,105	666	17	.....	17	43
	1879	1,498	544	954	.....	.....	.....	.....
	1869	1,617	822	795	.....	.....	.....	.....
Idaho.....	1914	50,326	38,264	1,674	431	9,928	29	16,120
	1909	42,804	35,529	2,407	242	4,606	20	8,409
	1904	16,987	15,145	1,078	127	537	100	1,702
	1899	5,649	4,010	1,605	28	6	.....	6
	1889	1,999	975	1,024	.....	.....	.....	2
	1879	1,682	546	1,136	.....	.....	.....	.....
	1869	606	311	295	.....	.....	.....	.....
Wyoming.....	1914	10,004	6,925	537	1,366	1,176	.....	1,691
	1909	7,628	6,467	465	182	514	.....	801
	1904	3,604	3,088	382	88	46	.....	132
	1899	3,820	3,237	534	42	7	.....	87
	1889	1,824	1,608	216	.....	.....	.....	5
	1879	755	717	38	.....	.....	.....	.....
	1869	344	310	34	.....	.....	.....	.....
Colorado.....	1914	162,828	126,608	6,669	2,075	27,349	127	57,278
	1909	154,615	135,750	1,426	1,464	15,874	101	35,944
	1904	124,907	118,660	2,094	317	3,765	71	15,730
	1899	43,434	39,883	1,493	519	1,187	352	1,896
	1889	32,676	30,641	1,723	36	.....	276	58
	1879	5,802	3,953	1,849	.....	.....	.....	.....
	1869	2,225	1,433	792	.....	.....	.....	.....
New Mexico.....	1914	15,668	13,561	23	775	1,309	.....	2,617
	1909	15,465	11,781	74	365	3,245	.....	4,586
	1904	5,948	5,417	149	114	203	65	233
	1899	3,658	3,433	153	64	8	.....	8
	1889	1,825	1,492	323	.....	.....	10	.....
	1879	1,359	427	932	.....	.....	.....	.....
	1869	911	252	659	.....	.....	.....	.....
Arizona.....	1914	54,697	44,312	70	795	8,918	602	23,118
	1909	39,140	34,212	129	1,285	3,314	200	15,100
	1904	21,412	19,338	267	1,392	165	250	4,821
	1899	8,537	7,728	400	371	38	.....	534
	1889	826	457	329	.....	.....	40	.....
	1879	530	370	160	.....	.....	.....	.....
	1869	90	80	10	.....	.....	.....	.....

<sup>1</sup> Includes power for Indian Territory in 1904 and prior censuses.

HORSEPOWER USED IN MANUFACTURING INDUSTRIES, BY DIVISIONS AND STATES:  
1869-1914—Continued.

Table 217—Continued.		PRIMARY HORSEPOWER.							Electric horse- power owned and rented.
DIVISION AND STATE.	Census year.	Total.	Owned.			Rented.			
			Steam engines and turbines.	Water wheels and motors.	Internal- combustion engines.	Electric.	Other.		
MOUNTAIN—Continued.									
Utah.....	1914	59,536	34,020	3,494	470	21,552	-----	34,018	
	1909	42,947	29,084	2,997	226	10,592	48	15,402	
	1904	19,397	13,145	3,252	59	2,941	-----	4,272	
	1899	12,674	7,616	3,366	89	1,588	15	2,829	
	1889	5,064	2,530	2,492	10	-----	32	64	
	1879	4,689	1,154	3,535	-----	-----	-----	-----	
	1869	2,500	331	2,169	-----	-----	-----	-----	
Nevada.....	1914	18,748	13,433	909	139	4,263	4	17,574	
	1909	7,765	4,533	399	201	2,307	325	6,441	
	1904	2,834	1,092	782	125	550	285	550	
	1899	1,561	628	893	39	1	-----	1	
	1889	372	318	6	48	-----	-----	-----	
	1879	716	608	108	-----	-----	-----	-----	
	1869	8,545	6,007	2,538	-----	-----	-----	-----	
PACIFIC:									
Washington.....	1914	399,567	301,923	9,306	3,162	84,953	223	112,485	
	1909	297,897	257,249	8,065	1,494	30,951	138	43,615	
	1904	168,342	150,798	4,642	493	11,650	759	15,290	
	1899	87,601	77,821	6,853	189	2,562	176	3,137	
	1889	42,579	37,709	4,851	3	-----	16	63	
	1879	4,395	3,210	1,185	-----	-----	-----	-----	
	1869	2,823	1,411	1,412	-----	-----	-----	-----	
Oregon.....	1914	219,222	116,591	57,275	1,289	44,010	57	53,739	
	1909	175,019	112,244	47,438	428	14,811	98	20,802	
	1904	81,348	55,512	20,660	371	4,727	78	5,223	
	1899	60,005	37,986	19,263	195	2,243	318	2,690	
	1889	32,508	22,736	9,280	2	-----	490	37	
	1879	13,589	4,334	9,255	-----	-----	-----	-----	
	1869	8,277	2,471	5,806	-----	-----	-----	-----	
California.....	1914	491,025	207,695	7,450	15,614	258,734	1,532	291,344	
	1909	329,100	193,556	7,670	10,115	116,537	1,222	143,684	
	1904	210,359	154,922	7,260	6,292	39,363	2,522	49,575	
	1899	126,953	106,799	4,680	3,244	9,624	2,606	15,762	
	1889	72,931	64,886	5,091	361	-----	2,593	393	
	1879	32,921	28,071	4,850	-----	-----	-----	-----	
	1869	25,370	18,493	6,877	-----	-----	-----	-----	